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| 10/657,969 | 09/09/2003 | Dave G. Erickson | 38190/263311 | 4140 |
| 826 | 7590 | 12/20/2005 | EXAMINER | |
| ALSTON & BIRD LLP BANK OF AMERICA PLAZA 101 SOUTH TRYON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000 | | | AFTERGUT, JEFF H | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1733 | |

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/657,969

Applicant(s)

ERICKSON ET AL.

Examiner

Jeff H. Aftergut

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 6, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Brussee.

Brussee taught that it was known to form a filament wound composite article which included a mandrel having a lay up surface for receiving composite material wherein the lay up surface defined the inner portion of the contour of the composite to be formed. The mandrel included a grip feature which included a groove which extended about the inner portion of the mandrel and which grip portion had a retaining surface configured to retain the composite structure in a predetermined configuration during manufacture. More specifically, the reference taught that one would have incorporated a mandrel including end fittings 36 and 37 which each had a circumferentially extending groove 38 therein. The reference taught that in the course of applying strands 35 of resin impregnated reinforcing material upon the mandrel, the reference taught that strands 35 were secured at the ends of the mandrel with a tie down or binding strand or wire 48 which was wound into the retaining groove over the strands 35 in order to retain the same on the mandrel. Note that the end fittings are part of the lay up surface in the operation.

The reference taught that the groove extended completely about the about the end fittings, see claim 2. regarding claim 3, note that the retaining surface is generally perpendicular to the lay up surface and that it defined an edge with the lay up surface wherein the edge and the retaining surface engaged the composite material. Regarding claim 4, note that the grip feature included a bottom portion extending outward of the retaining surface to a periphery of the mandrel. Additionally note regarding claim 6 that the reference taught a grip feature which defined an interior boundary having a shape generally corresponding to the desired shape of the composite structure. Regarding claim 7, note that the grip portion is a grip groove as taught by Brussee.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brussee in view of either one of Voirol or Thongs, Jr..

Brussee is discussed above in paragraph 2 and applicant is referred to the same for a complete discussion of the reference. The reference failed to teach that the grooves therein would have had tapered edge portions or the specific depth of the grooves therein.

The references to either one of Thongs, Jr. or Voirol suggested that one skilled in the art at the time the invention was made would have known to provide a groove with a tapered wall wherein the groove was for retaining a mandrel part wherein filaments were also wound into the groove and retained therein as taught by either reference to Voirol or Thongs. More specifically, the groove 6 of the fitting 4 in Voirol included a tapered portion on either side of the floor of the groove 6, see Figure 2. The reference to Thongs suggested that the fittings would have been provided with grooves 52 which included tapered walls 53, see Figure 4. As it was known to provide a fitting with grooves for retaining filaments on a mandrel as evidenced by Brussee and in order to facilitate retention of the fittings on the finished assembly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the retaining grooves of either one of Voirol or Thongs in the processing and system or Brussee in order to provide a means to retain the windings disposed on the mandrel therein.

With respect to claim 5, one skilled in the art would have been able to determine the necessary groove depth in order to adequately retain the plies applied and such would have been determined through routine experimentation.

5. Claims 1-6, 9-12 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corbett et al in view of Forster et al.

Corbett et al suggested that it was known at the time the invention was made to incorporate a plurality of tiedown plies in the manufacture of a composite structure on a mandrel wherein the composite structure including facing sheets disposed against a honeycomb core. The reference additionally envisioned the use of resin films between

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the tie down plies in order to retain the tie down plies against the mandrel during processing and to adhere the tie down plies together. The reference was silent as to the use of a retaining means for retaining the tie down plied in position which means included a retaining element on the surface of the mandrel or tooling.

The reference to Forster suggested that it was known at the time the invention was made to employ a means to retain the plies disposed about the honeycomb panel in order to prevent crushing of the same in the autoclave wherein the means for retaining the plies included a plate 140 with a plurality of openings therein at 142 which was used to retain the plies in position on the mandrel surface (see Figure 2b and column 2, lines 55-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a hold down means about the exterior region of the mandrel defining part forming surface wherein the same included a means for retaining the composite plies there against as suggested by Forster in the process of making a composite assembly as taught by Corbett.

With regard to the various dependent claims, the applicant is advised that the perforated plate 140 was disposed completely about the article being molding and thus provided a continuous area for retaining the plies against the mold in the autoclave. Regarding the use of a film to hold the tie downs together, the reference to Corbett et al suggested this arrangement. Note that the films described had a lower curing temperature than the remaining composite material employed. The selection of suitable resins and materials for the operation was well within the skill level of the ordinary artisan and the specified materials are taken as conventional in the art.

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6. Claims 7, 8, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 5 further taken with any one of Brussee, Voirol or Thongs, Jr..

While the reference to Forster suggested that one skilled in the art would have disposed the retaining member about the part being manufactured, it failed to teach that the retaining means was in the form of a groove disposed about the part. However, one skilled in the art would have understood that a groove would have been suitable for the application of vacuum for retaining the components therein as opposed to the use of perforations in the plate. Additionally, when using a means to tie down which included disposing material within the retaining means, it was known to utilize a groove for the same as the tie down components were able to retain the material continuously about the component as evidenced by any one of Brussee, Voirol or Thongs, Jr. the applicant is advised that those skilled in the art would have understood that the use of a continuous groove about the assembly would have facilitated the tie down better than just in selected openings about the periphery of the components. It would have been obvious to provide a continuous groove about the assembly as suggested by any one of Brussee, Voirol or Thongs, Jr. in the process of making a composite panel with a recessed hold down means as taught by the references as set forth above in paragraph 5.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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8. Claims 9-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 9, line 9, the language "the adhesive film" appears which lacks proper antecedent basis. It is suggested that the applicant define an adhesive film prior to stating that the adhesive film was used to hold the tie down plies in place.

Conclusion


9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Japanese Patent '635 appears to teach the use of pins as a means for retaining the plies in the molding of the facing material against the honeycomb.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 571-272-1212. The examiner can normally be reached on Monday-Friday 7:15-345 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jeff H. Aftergut
Primary Examiner
Art Unit 1733

JHA
December 9, 2005